



Spring Term Term 2 Triple Science

Year 11

Name:	 	
Tutor:		



Year 11 Homework Timetable

Monday	Science Task 1	Ebacc Option A Task 1	Option C Task 1
Tuesday	Sparx Science	Option B Task 1	Modern Britain Task 1
Wednesday	English Task 1	Science Task 2	Option C Task 2
Thursday	Ebacc Option A Task 2	Option B Task 2	Sparx Catch Up
Friday	Modern Britain Task 2	English Task 2	Sparx Maths

Sparx Science

- Complete 100% of their assigned homework each week Sparx Maths
- Complete 100% of their assigned homework each week

Option A (EBACC)
French
Geography
History

Option B
Art
Business Studies
Catering
Childcare
Triple Science
Travel and Tourism
Music
Sport
IT

Option C
Business Studies
Catering
Computer Science
Drama
Health & Social Care
Media Studies
Photography
Sport
Sociology

Half Term 3 (6 weeks) - Year 11			
Week / Date	Homework task 1 Cornell Notes	Homework task 2 and 3 Exam Question	
Week 1 6th January 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions	
Week 2 13th January 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions	
Week 3 20th January 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions	
Week 4 27th January 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions	
Week 5 3rd February 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions	
Week 6 10th February 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions	

Half Term 4 (6 weeks) - Year 11			
Week / Date	Homework task 1 Cornell Notes	Homework task 2 and 3 Exam Question	
Week 7 24th February 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions	
Week 8 3rd March 2025	Mock Exams	Mock Exams	
Week 9 10th March 2025	Mock Exams	Mock Exams	
Week 10 17th March 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions	
Week 11 24th March 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions	
Week 12 31st March 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions	

WEEK 1 Questions (cover and quiz) - Ecology Part 1

Question	Answer
	The organisation of living things into groups according
Define the keyword classification.	to their similarities.
Who devised the traditional classification of living things	to their entirect.
into groups depending on their structure and	
characteristics?	Carl Linnaeus.
What are the seven groups used in Carl Linnaeus'	Kingdom, phylum, class, order, family, genus and
classification system.	species
Which two groups in the Linnaean classification system	
are used in the binomial naming system?	Genus and species.
What two developments lead to a change in the	Improvements in microscopes and understanding of
classification system?	biochemical processes.
How did the improvement of microscopes lead to new	Evidence from internal structures became more
models of classification?	developed.
Evidence from what type of analysis lead to the	
development of the three-domain classification system?	Chemical analysis.
Who developed the three-domain system of	Charling analysis.
classification?	Carl Woese.
oldosillodion.	Archaea (primitive bacteria usually living in extreme
What are the domains in Carl Woese's classification	environments), Bacteria (true bacteria), Eukaryota
system?	(which includes protists, fungi, plants and animals)
oyotom.	Primitive bacteria usually living in extreme
What type of organisms are in the group archaea?	lenvironments.
What type of organisms are in the group eukaryota?	Protists, fungi, plants and animals.
What do evolutionary trees show?	How scientists believe organisms are related.
	They use current classification data for living organisms
What evidence is used to devise evolutionary trees?	and fossil data for extinct organisms.
what evidence is used to devise evolutionary trees:	The interaction of a community of living organisms
	(biotic) with the non-living (abiotic) parts of their
What is an ecosystem?	lenvironment.
What is all soosystem.	A supply of materials from their surroundings and from
What do organisms get from their ecosystem?	the other living organisms there.
What do organisms get nom their coosystem:	
What do plants compete for?	Light and space, water and mineral ions from the soil.
·	
What do animals compete for?	Food, mates and territory.
What is a community?	The different populations living in an area.
·	
What is a population?	All the members of the same species living in an area.
	A community where all the species and environmental
	factors are in balance so that population sizes remain
What is a stable community?	fairly constant.
What do different species in a community depend on	
each other for?	Food, shelter, pollination, seed dispersal etc.
What keyword describes living factors in an ecosystem?	Biotic factors.
What keyword describes non-living factors in an	
ecosystem?	Abiotic factors.
What type of factors are light intensity, temperature, soil	
pH?	Abiotic factors.
What type of factors are food, new predators, new	
pathogens	Biotic factors.
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Week 1 Task 1 - 1 Page of retrieval quizzing - do not use full sentences		

Week 1 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

	ne percentages of nitrogen, oxygen and carbon dioxide in the Earth's atmo anged from the Earth's early atmosphere. (6)
 	
_,	
	Work: Explain how the percentages of nitrogen, oxygen and carbon ged from the Earth's early atmosphere. (6)

Week 1 Task 3 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Ethanol can be produced from ethene and steam. The equation for the reaction is: $C_2H_4(g) + H_2O(g) \rightleftharpoons C_2H_5OH(g)$ The forward reaction is exothermic. Explain how the conditions for this reaction should be chosen to produce ethanol as economically as possible. (6)
Improvement Work: Explain how the conditions for this reaction should be chosen to produce ethanol as economically as possible. (6)

WEEK 2 Questions (cover and quiz) - Homeostasis 2

Question	Answer
Which body system involved in homeostasis causes	7 11 10 11 5 1
slow, long lasting responses?	The endocrine system.
Which two hormones can cause rapid responses?	Insulin and adrenaline.
Which hormone is involved in the 'fight or flight'	ilisuili aliu auleliailile.
response?	Adrenaline.
Which gland secretes several different hormones and	Aurenanne.
controls and coordinates other glands?	The pituitary gland.
Where in the body is the pituitary gland?	The brain.
Which hormone does FSH (follicle stimulating hormone)	
stimulate the ovaries to release?	Oestrogen.
Which hormone stimulates the release of oestrogen	FOLL (fallials attioned attions to a manager a)
from the ovaries?	FSH (follicle stimulating hormone).
Which gland secretes FSH (follicle stimulating	The a :: :
hormone)?	The pituitary gland.
Which hormone controls blood glucose levels?	Insulin.
Where is insulin released from?	The pancreas.
	Insulin causes glucose in the blood to move into cells to
	be turned into glycogen and stored in the liver and
What does insulin do?	muscles.
How is excess glucose stored in the human body?	As glycogen in the liver and muscles.
Which two hormones interact in a negative feedback	
cycle to control blood glucose levels?	Insulin and glucagon.
Which hormone causes glycogen in the liver to be	ilisuili aliu giucagoti.
converted back into glucose?	Glucagon
When is glucagon released by the pancreas?	Glucagon. When blood glucose levels fall below the ideal level.
When is glucagon released by the particleas?	Glucagon is a hormone that is released when blood
	glucose concentrations fall below the ideal level,
	glycogen is a complex carbohydrate used to store
What is the difference between glucagon and glycogen?	excess glucose in the body.
Which disease is caused if your pancreas does not	excess glasses in the body.
produce enough insulin?	Type 1 diabetes.
Which disease is caused if your body stops responding	Type I diabetee.
to insulin made by the pancreas?	Type 2 diabetes.
Which type of diabetes usually starts in young children	Type 2 diabetee.
and teenagers?	Type 1 diabetes.
Which type of diabetes is linked to obesity and lack of	71
exercise?	Type 2 diabetes.
Which type of diabetes is usually treated with insulin	71
injections?	Type 1 diabetes.
Which type of diabetes is first treated with a controlled	
diet and exercise?	Type 2 diabetes.
Which hormone stimulates basal metabolic rate and has	
a role in growth and development?	Thyroxine.
Which gland releases thyroxine?	The thyroid gland.
Which hormone is released by the adrenal glands	
during times of fear or distress?	Adrenaline.
Which glands release adrenaline?	The adrenal glands.
-	It increases heart rate to increase the delivery of oxygen
What is the effect of adrenaline on the body?	and glucose to the brain and muscles.
Is adrenaline or thyroxine controlled by negative	
feedback?	Adrenaline.
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Week 2 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 2 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Stem cells are used to treat some human diseases.

Stem cells can be collected from early embryos. These stem cells have not begun to differentiate, so they could be used to produce any kind of cell, tissue or organ. The use of embryonic stem cells to treat human diseases is new and, for some diseases, trials on patients are happening now.

Stem cells can also be collected from adult bone marrow. The operation is simple but may be painful. Stem cells in bone marrow mainly differentiate to form blood cells. These stem cells have been used successfully for many years to treat some kinds of blood disease. Recently there have been trials of other types of stem cell from bone marrow. These stem cells are used to treat diseases such as heart disease.

Evaluate the use of stem cells from embryos or from adult bone marrow for treating human diseases. (5)
Improvement Work: Evaluate the use of stem cells from embryos or from adult bone marrow for treating human diseases. (5)

Week 2 Task 3 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz. Plan an investigation to show how the concentration of the sodium thiosulfate solution affects the rate of the reaction with dilute hydrochloric acid.
Your plan should give valid results. (6)
Improvement Work: Plan an investigation to show how the concentration of the sodium thiosulfate solution affects the rate of the reaction with dilute hydrochloric acid. Your plan should give valid results. (6)

WEEK 3 Questions (cover and quiz) - Rates of Reaction 1

Question	Answer
According to collision theory, chemical reactions can	When reacting particles collide with each other with
only occur	sufficient energy.
	The catalyst lowers the activation energy by providing
How does a catalyst increase the rate of a reaction?	an alternative pathway for the reaction.
How does increasing the concentration of a solution	There are more particles in a given volume, therefore
increase the rate of a reaction?	successful collisions occur more frequently.
How does increasing the pressure of gases increase the	The particles are closer together, therefore successful
rate of a reaction?	collisions occur more frequently.
	There are more particles on the outer surface available
How does increasing the surface area of a solid cause	for collisions with other reactant particles, therefore
the rate of reaction to increase?	successful collisions occur more frequently.
	The particles will have more kinetic energy, so will move
	around faster. This increases the frequency of the
How does increasing the temperature of a reaction	collisions, therefore successful collisions occur more
increase the rate?	frequently.
If a reaction is endothermic in one direction, what is it in	•
the other direction?	Exothermic.
If the concentration of a reactant in a reversible reaction	
is increased, what will happen to the amount of	More products will be produced; until equilibrium is
products?	reached.
What can be measured to calculate the rate of a	The mass lost in a specific amount of time / The volume
reaction?	of gas produced in a specific amount of time.
On a rate of reaction curve, how can you tell that the	
reaction has stopped?	The curve / line becomes horizontal.
On a rate of reaction curve, what does a less steep	
gradient tell us about a reaction?	The reaction is slower / happening at a lower rate.
On a rate of reaction curve, what does a steep gradient	11 5
tell us about a reaction?	The reaction is fast / happening at a high rate.
	Temperature, Concentration of solution, Surface area of
State five factors that affect rate of reaction.	solids, Pressure of gases, Catalyst
What is the formula used to calculate the rate of a	Rate of reaction = Amount of reactant used / time OR
reaction?	Rate of reaction = Amount of product made / time
State three units which can be used for the rate of a	'
reaction.	g/s, cm ³ /s, mol/s
Using Le Chatelier's principle, explain what will happen	
in the following reaction in equilibrium if we increase the	
concentration of the hydrogen and iodine? I2(g) + H2(g)	Equilibrium will shift to the right to oppose the increase
<> 2HI(g).	in hydrogen and iodine. More HI will be produced
	Conical flask / test tube (to hold reactants); stopper with
List the equipment needed to measure the volume of	delivery tube; gas syringe / upturned measuring cylinder
gas produced in a reaction.	filled with water; stopwatch.
<u>, </u>	Beaker / conical flask (to hold reactants); cotton wool
List the equipment needed to measure the change in	stopper (to allow gas to escape, but not drops of water);
mass of a reaction mixture when gas is released.	electronic balance / weighing scales; stopwatch
What can be said about the amount of energy being	3 9
transferred in each direction in a reversible reaction at	
equilibrium?	Same amount of energy is transferred in both directions
What colour is hydrated copper sulphate?	Blue
what colour is hydrated copper sulphate?	ыис

 		 	 		
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Week 3 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Improvement Work: Explain why calcium fluoride has a high melting point. (4)

Week 3 Task 3 - Complete the exam question then fill the remainder of the page with	
retrieval quizzing. Use full sentences for the exam question, but not the quiz.	
Polymers are produced from crude oil. Describe the structure and bonding in a thermosoftening polymer and explain why	
thermosoftening polymers melt when heated. (4)	
thermosoitening polymers men meated. (4)	
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Improvement Marks. Describe the structure and handing in a thermosoftening nelumen	•
Improvement Work: Describe the structure and bonding in a thermosoftening polymer	
and explain why thermosoftening polymers melt when heated. (4)	

WEEK 4 Questions (cover and quiz) - Waves 2

Question	Answer
What is the speed of sound in air?	330 metres per second.
What is the relationship between frequency of a wave	
and its time period?	Frequency = 1 / Time period
	The particles in the solid vibrate and transfer kinetic
How do sound waves travel through a solid?	energy through the material.
What natural event causes seismic waves to be	
produced? What types are produced?	Earthquakes; They produce both P-waves & S-waves
What property of waves in different mediums causes	Velocity; Wave speed is slower in denser materials,
refraction?	causing refraction
What type of waves can be produced by oscillations in	
an electrical circuit?	Radio waves
	When radio waves are absorbed, they can induce
How can radio waves generate an alternating current in	oscillations in a circuit with the same frequency as the
a circuit?	waves themselves.
What wave phenomenon is used by lenses to form an	
image?	Refraction
What colour does an object appear if all wavelengths	
are absorbed?	Black opaque
What do all bodies (objects) emit and absorb?	Infrared radiation
What happens to the quantity of infrared radiation	The hotter the object, the more infrared radiation it will
emitted by an object as temperature increases?	emit.
	An object that absorbs all of the radiation that is incident
What is a perfect black body?	upon it.
How much radiation does a perfect black body reflect or	
transmit?	None
	It is a perfect absorber since it absorbs all radiation
Why is a perfect black body the best possible emitter of	incident on it.
radiation?	A perfect absorber is also a perfect emitter
What can be said about the rates of emission and	The body is absorbing and emitting radiation at the
absorption for a body at constant temperature?	same rate.

Week 4 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

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	Vork: Describe the	difference betw	een longitudinal	waves and transvers
vaves. (2)				
				

Week 4 Task 3 - Complete the exam question then fill the remainder of the page with Explain how a moving-coil loudspeaker produces a sound wave. (4) Improvement Work:

WEEK 5 Questions (cover and quiz) - Homeostasis 3

Question	Answer
What is the main male reproductive hormone?	Testosterone.
Which gland produces testosterone in males?	The testis.
What does testosterone do?	It stimulates sperm production.
After puberty on average how often is an egg released from the ovary?	Approximately every 28 days.
What happens at ovulation?	An egg is released from the ovary.
What term refers to 'the release of an egg from the ovary'?	Ovulation.
Name the four hormones involved in the menstrual cycle.	FSH (follicle stimulating hormone), LH (luteinizing hormone), oestrogen, progesterone.
Which hormone causes an egg in the ovary to mature?	FSH (follicle stimulating hormone).
Which hormone stimulates the release of a mature egg from the ovary?	LH (luteinizing hormone).
Which hormones are involved in maintaining the uterus lining?	Progesterone and oestrogen.
At what point in the menstrual cycle does a woman have her period?	Day 1-5.
At what point in the menstrual cycle is an egg released?	Day 12-16
Which gland releases LH?	The pituitary gland.
Which gland releases oestrogen?	The ovaries.
What produces progesterone?	The empty follicle after ovulation.
What is produced by the empty follicle after ovulation?	Progesterone.
What is the role of progesterone?	It maintains the uterus lining and (HT) inhibits release of FSH and LH.

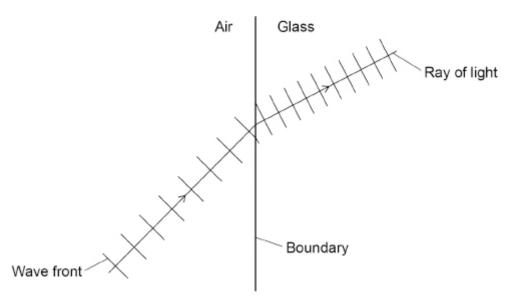
Week 5 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 5 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Outline a safe plan the student could use to make pure, dry, crystals of the soluble salt copper sulphate from an insoluble metal oxide and dilute acid. (6)				
Improvement Work: Outline a safe plan the student could use to make pure, dry, crystals of the soluble salt copper sulphate from an insoluble metal oxide and dilute acid. (6)				

Week 5 Task 3 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Figure 4 shows what happens to wave fronts as they pass across the boundary between air and glass.



Explain in terms of the wave fronts, why refraction happens at the boundary between air and glass. (3)
Improvement Work: Explain in terms of the wave fronts, why refraction happens at the boundary between air and glass. (3)

WEEK 6 Questions (cover and quiz) - Waves 1

Answer		
Transverse and longitudinal		
A wave for which the oscillations are perpendicular to the direction of energy transfer.		
A wave for which the oscillations are parallel to the direction of energy transfer.		
Electromagnetic waves (e.g. light, X rays), Seismic (S)		
waves, water waves		
Sound waves, Seismic (p) waves		
Compressions and rarefactions		
The maximum displacement of a point on a wave from its undisturbed position.		
The distance from a point on a wave to the same position		
on the adjacent wave. Most commonly peak to peak or		
trough to trough. The number of waves that pass a given point each second		
/ the number of oscillations per second.		
Hertz, Hz		
200 waves pass a given point each second / a point		
oscillates 200 times every second.		
The speed at which the wave moves through a medium.		
Energy		
Literacy		
wave speed = frequency x wavelength		
Reflection		
The particles in the solid vibrate and transfer kinetic		
energy through the material.		
Electromagnetic waves.		
Radio waves, Microwaves, Infrared, Visible light,		
Ultraviolet, X-rays, Gamma rays		
EM waves all travel at the same speed in a vacuum and in air.		
3.0 x 10 ⁸ m/s		
Refraction		
They bend towards the normal		
The angle of refraction is less than the angle of incidence		
They can cause the skin to age prematurely		
They can increase the risk of developing cancer		
They are ionising radiation so can cause mutations in genes. They can lead to increased risk of developing various		
cancers.		
Electrical heaters, cooking food Infrared cameras		
Satellite communications, Cooking food		

Week 6 Task 1 - 1 Page of retrieval quizzing - do not use full sentences					

Week 6 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz. Describe a method to investigate if the amount of water in the soil affects the number of buttercups in the field. (6)						
Improvement Work: Describe a method to investigate if the amount of water in the soil affects the number of buttercups in the field. (6)						

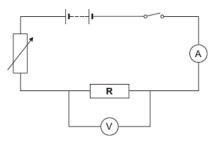
Week 6 Task 3 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz. A woman's hand accidentally touches a hot object. The woman moves her hand away rapidly. Describe how the woman's nervous system coordinates the reflex action. (6)

Improvement Work: Describe how the woman's nervous system coordinates the reflex action. (6)

WEEK 7 Questions cover and quiz Use your blue mock sheet for your retrieval practice this week.

Week 7 Task 1 - 1 Page of retrieval quizzing - do not use full sentences				

Week 7 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.



A resistor is a component that is used in an electric circuit. Describe how a student would use the circuit to take the readings necessary to determine the resistance of resistor R. (6)					
Improvement Work: A resistor is a component that is used in an electric circuit. Describe how a student would use the circuit to take the readings necessary to determine the resistance of resistor R. (6)					

Week 7 Task 3 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Lithium carbonate contains lithium ions and carbonate ions.

A student tested the tablet for lithium ions and for carbonate ions.

The student used:

•	a metal wire
•	dilute hydrochloric acid
	limewater. an investigation to show the presence of lithium ions and of carbonate ions in the tablet. should include the results of the tests for the ions. (6)
ions	ovement Work: Plan an investigation to show the presence of lithium ions and of carbonate in the tablet. should include the results of the tests for the ions. (6)

WEEK 8 cover and quiz Use your blue mock sheet for your retrieval practice this week.

Week 8 Task 1 - 1 Page of retrieval quizzing - do not use full sentences					

Week 8 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing on your Red and Amber questions on your blue sheet.

Describe the model now used for the structure of an atom. In your answer you should give details of the individual particles that make up an atom, including the relative masses and relative charges of these particles. Do not include a diagram in your answer. (6)						
Improvement Work: Describe the model now used for the structure of an atom. (6)						

Week 8 Task 3 - Complete the exam question then fill the remainder of the page with retrieval quizzing on your Red and Amber questions on your blue sheet.

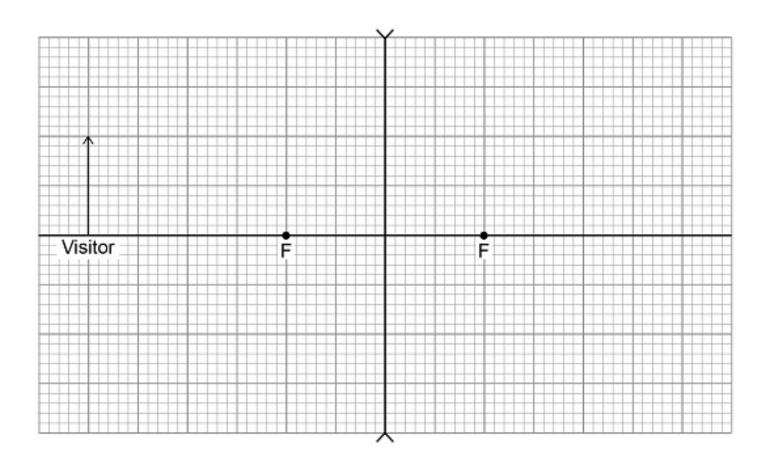
A door is fitted with a security lens and a lock.

The security lens allows a person to see a visitor before opening the door.

The security lens is concave.

The diagram below is an incomplete ray diagram representing a visitor standing near the security lens.

Complete the diagram to show how an image of the visitor is formed by the concave lens. Draw an arrow to represent the image.



mprovement Work:						
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WEEK 9 Questions (cover and quiz) - Organic Chemistry 2

Question	Answer
What is the most abundant element in air?	Nitrogen/N ₂
Which gas reacts with hydrocarbons when they burn?	Oxygen/O ₂
Name one fossil fuel used in cars.	Petrol/diesel oil
	Carbon monoxide/carbon dioxide
Name a gas produced when carbon burns.	
What compound forms when hydrogen burns in air?	Water
To get a roaring blue Bunsen burner flame, do you open or close the air hole?	Open it
Which cells in the blood carry oxygen around the body?	Red blood cells
What is the black solid element found in soot and smoke?	Carbon
What are the products of the complete combustion of	
hydrocarbon fuels?	Carbon dioxide; water
Which gas is produced during incomplete combustion,	
but not complete combustion, of hydrocarbon fuels?	Carbon monoxide
What solid element is produced during the incomplete	
combustion of hydrocarbon fuels?	Carbon
Name the fuel used for large ships and some power stations.	Fuel oil
Which gas reacts with hydrocarbon fuels when they burn?	Oxygen
What is the pH of pure water?	7
Name the gas formed when acids react with metals.	Hydrogen
Name the gas formed when acids react with calcium carbonate.	Carbon dioxide
Name the solid yellow element placed below oxygen in group 6 of the periodic table.	Sulfur
Which fraction ignites more easily, kerosene or fuel oil?	Kerosene
Which fraction contains hydrocarbon molecules with the	
longer molecules, gases or bitumen?	Bitumen
Name the process used to separate crude oil into	
simpler, more useful mixtures.	Fractional distillation
Name the homologous series to which ethanol belongs.	Alkanes
What are the two products of complete combustion of	
ethane?	Carbon dioxide; water
What type of rain forms when sulfur dioxide, from some	L -: -1
hydrocarbon fuels, dissolves in rainwater?	Acid
Name the greenhouse gas released when any hydrocarbon fuel burns.	Carbon dioxide
Which occupies the least volume, 1 kg of hydrogen gas	Cal bott dioxide
or 1 kg of liquid hydrogen?	1 kg of liquid hydrogen

Week 9 Task 1 - 1 Page of retrieval quizzing - do not use full sentences	

Week 9 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing on your Red and Amber questions on your blue sheet. Penicillin is an antibiotic which stops bacteria from reproducing. Explain how natural selection could have produced strains of penicillin resistant bacteria. (5)
Improvement Work: Penicillin is an antibiotic which stops bacteria from reproducing. Explain how natural selection could have produced strains of penicillin resistant bacteria. (5)

Week 9 Task 3 - Complete the exam question then fill the remainder of the page with retrieval quizzing on your Red and Amber questions on your blue sheet.

The percentages of carbon dioxide and oxygen have changed from Earth's early atmosphere to Earth's atmosphere today. Explain the processes that led to these changes. (6) Improvement Work: The percentages of carbon dioxide and oxygen have changed from Earth's early atmosphere to Earth's atmosphere today. Explain the processes that led to these changes. (6)

WEEK 10 Questions (cover and quiz) - Magnetism

What type of force does induced magnetism always cause? A force of attraction A force of attraction The induced magnet loses most/all of its magnetism always that papens when an induced magnet is removed from a magnetic field? The region surrounding a magnet where another magnet or magnetic material experiences a non-contact force. Give four examples of magnetic materials What can always be said about the force between a magnet and a magnetic material? How does the strength of a magnetic field alter as you move further away from the magnet producing it? In the direction that a north pole would experience a force if placed in the field. From north seeking pole to the south seeking pole of a magnet and a magnetic compass contain? What does a magnetic compass contain? What is produced when current flows through a conducting wire? A magnetic field is produced around the wire The distance from the wire A coil of wire which when current passes through a strong magnetic field Describe the magnetic field found inside a solenoid. What is an electromagnet? What is an electromagnet? Why must the current flowing through the primary coil of a transformer be alternating? In which direction do the arrows on the field lines point		. , ,
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a transformer be alternating? primary coil must be alternating In which direction do the arrows on the field lines point		
In which direction do the arrows on the field lines point		
·		primary coil must be alternating
	•	
	at the north pole of a magnet?	Outwards (from N to S)
·	In which direction do the arrows on the field lines point	
at the south pole of the magnet? In towards the south pole	at the south pole of the magnet?	In towards the south pole

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Week 10 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Explain how the properties of α , β and γ radiation affect the level of the hazard at different distances. (6)
Improvement Work: Explain how the properties of α , β and γ radiation affect the level of the hazard at different distances. (6)

Week 10 Task 3 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

A student made water waves in a ripple tank. Describe how the frequency and wavelength of the water waves in the ripple tank can be measured accurately. (4)
Improvement Work: A student made water waves in a ripple tank. Describe how the frequency and wavelength of the water waves in the ripple tank can be measured accurately. (4)

WEEK 11 Questions (cover and quiz) - Ecology 3

Question	Answer
What is biodiversity?	The variety of all the different species of organisms on earth, or within an ecosystem.
Why is a high biodiversity important?	It ensures the stability of ecosystems by reducing the dependence of one species on another for food, shelter and the maintenance of the physical environment.
How do humans reduce the amount of land available for other species?	By building, quarrying, farming and dumping waste.
What human activities reduce biodiversity?	Habitat destruction (deforestation, building, quarrying, farming), Pollution (air, water, dumping waste)
Why is burning peat as a fuel a problem?	It releases carbon dioxide into the atmosphere.
Explain why the increasing human population is a problem?	Rapid growth in the human population means that increasingly more resources are used and more waste is produced. Unless waste and chemical materials are properly handled, more pollution will be caused
What pollutes water?	Sewage, fertiliser or toxic chemicals.
What pollutes air?	Smoke and acidic gases.
What pollutes land?	Landfill and toxic chemicals.
Why is pollution a problem?	It can kill plants and animals which can reduce biodiversity.
Why are large area of tropical forests being destroyed?	To provide land for cattle, rice fields and to grow crops for biofuels.
What is deforestation?	The cutting down of large areas of forest.
Which gases in the atmosphere are increasing and contributing to global warming?	Carbon dioxide and methane.
What are the biological consequences of global warming?	Loss of habitats due to flooding, changes in the distribution of organisms due to changes in temperature or rainfall, changes in the migration patterns of animals.
Which gases cause acid rain?	Sulfur dioxide and nitrogen oxides.
What problem is caused by increasing levels of carbon dioxide and methane in the atmosphere?	Global warming.

Week 11 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 11 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Water pollution is a problem for humans and wildlife. Explain how human activities are polluting rivers, lakes and seas. (6)

Improvement Work: Water pollution is a problem for humans and wildlife. Explain how human activities are polluting rivers, lakes and seas. (6)

Week 11 Task 3 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

An echidna can dilate and constrict blood vessels in its skin. Explain how the dilation of blood vessels in the skin can help to decrease body temperature.(3)
Improvement Work: Explain how the dilation of blood vessels in the skin can help to decrease body temperature.(3)

WEEK 12 Questions (cover and quiz) - Rates of Reaction 2

Question	Answer
What does a horizontal line on a rate of reaction graph	
mean?	Reaction has stopped
What happens in a reversible reaction between gases in	The equilibrium position shifts in the direction of fewer
an enclosed system when pressure is increased?	moles of gas (to oppose the increase in pressure)
What happens to the gradient of a line if the rate of	
reaction is increased?	Becomes steeper.
	A substance which increases the rate of reaction but is
What is a catalyst?	not used up during the reaction
What is added to anhydrous cobalt chloride to change	
its colour from blue to pink in a reversible reaction?	Water.
Write down a definition of collision theory using the	For a chemical reaction to happen the reactant particles
following keywords: reaction, particles, reactant, energy.	must collide with sufficient energy
What is the definition of concentration in chemistry?	Number of particles in a given volume
	If a system is at equilibrium and a change is made to
	any of the conditions, then the equilibrium position will
(Higher only) State Le Chatelier's Principle.	shift to oppose the change
	Minimum amount of energy that particles must have to
What is meant by the term 'activation energy'?	react
	Forward and reverse reactions occur at the same rate;
What is meant by the term equilibrium?	concentrations of all substances stay constant
NA/host in the definition of the vote of a vection?	Rate at which reactants are being turned into products /
What is the definition of the rate of a reaction?	rate at which products are made
What is the name for the minimum amount of energy needed for a reaction to start?	Activation Energy
needed for a reaction to start?	Activation Energy
What is the name of a type of reaction in which the	
products can reform the reactants easily?	Reversible
What is the word for chemicals which react with each	
other?	Reactants
What conditions are required for dynamic equilibrium to	Closed system; apparatus prevents the escape of
be reached?	reactants and products
What three factors can be changed in a system at	
equilibrium?	Concentration of substances, temperature and pressure
(Higher only) What type of equilibrium exists when the	
forward and backward reactions happen at the same	D
rate in a closed system?	Dynamic equilibrium
(Higher only) Use Le Chatelier's principle to explain	More hydrogen and nitrogen will be made as the
what will happen if there is an increase in temperature of this reaction (the forward reaction is exothermic):	backward reaction is endothermic. Equilibrium shifts in the endothermic direction to oppose the increase in
$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$	temperature.
(Higher only) What will happen to the amount of	tomporatare.
product in an endothermic reaction (going forward) at	
equilibrium if the temperature is decreased?	Amount of product (yield) will decrease
(Higher only) What will happen to the amount of	1 (7)
product in an endothermic reaction (going forward) at	
equilibrium if the temperature is increased?	Amount of products (yield) will increase
(Higher only) What will happen to the amount of	
product in an exothermic reaction (going forward) at	
equilibrium if the temperature is increased?	Amount of products (yield) will decrease
(Higher only) What would be observed in a container	
where there is a reversible reaction in dynamic	
equilibrium?	No visible changes would be observed
(Higher only) What would happen to the position of	Equilibrium would shift towards the side with the smaller
equilibrium in a gaseous reaction if pressure increases?	number of moles of gases

Week 12 Task 1 - 1 Page of retrieval quizzing - do not use full sentences	
	
	
	
	
	
	
	

Week 12 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz. A stimulus from the hot pan will cause the muscle in the arm to contract and move the finger away. Describe how the stimulus from the hot pan reaches the muscle in the arm.(4)
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Improvement Work: Describe how the stimulus from the hot pan reaches the muscle in the arm.(4)

Week 12 Task 3 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz. Polyesters are made by a different method of polymerisation.						
The equation for the reaction to produce a polyester can be represented as:						
nHO——OH + nHOOC——COOH \rightarrow $+$ $-$ OOC——COO $+$ $+$ 2nH ₂ O						

$nHO- \bigcirc OH + nHOOC- \bigcirc COOH \rightarrow \{\bigcirc OOC- \bigcirc COO\}_n + 2nH_2O$
Compare the polymerisation reaction used to produce poly(ethene) with the polymerisation reaction used to produce a polyester. (4)
·
Improvement Work: Compare the polymerisation reaction used to produce poly(ethene) with the polymerisation reaction used to produce a polyester. (4)



Develop your character

